

EVALUATION OF TEXAS NATIVE GRASSES FOR HIGHWAY RIGHT OF WAYS

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Introduction

Introduced plant species are commonly seeded along Texas roadsides to reduce soil erosion. Bermudagrass (*Cynodon dactylon*) is often preferred over natives in roadside plantings because they are easier to establish and maintain, and seeds are commercially available. The USDA-NRCS, Kika de la Garza Plant Materials Center along with South Texas Natives at Texas A&M University-Kingsville have developed native grasses to serve as alternatives for introduced species in roadside plantings. Research has focused on 2 grasses that are native to Texas: hooded windmillgrass (WMG) and shortspike WMG. Both grasses possess characteristics making them well adapted to roadside plantings. In addition, these species have characteristics that may enable them to compete with introduced species. Native species such as hooded windmillgrass and shortspike windmillgrass will be a more desirable option for roadside planting if they develop percent canopy cover similar to bermudagrass.

Hypothesis

We tested the hypothesis that hooded windmillgrass (accessions WMG: 9085301 and 9085313) and shortspike windmillgrass (WMG: 9085260 and 9085283) will develop percent canopy cover similar to bermudagrass.

Study Area

The study area (Fig. 1) is located along Highway 385 in Andrews County, Texas, in the southern High Plains.

Methods

The experimental design was a randomized, complete-block with 20 6 by 3-m plots. Treatments (hooded WMG: 9085301 and 9085313; shortspike WMG: 9085260 and 9085283, and bermudagrass) were randomly assigned within each block. During autumn 2006, the point intercept method (Fig 2.) was used to estimate canopy cover within each plot 30, 60, 90, and 365 days after planting.

Results and Conclusions

Windmillgrasses established more successfully than bermudagrass. Total cover of vegetation was similar (ANOVA, $P = 0.867$) among planting treatments (Graph 1). Canopy cover of windmillgrass accessions was similar ($P = 0.154$), averaged across sampling dates (Graph 2). Other than the cheaper cost of bermudagrass seed, there is no ecological validation for planting bermudagrass when compared with windmillgrass in this area of west Texas.

Funding and Acknowledgements

This study is funded by the Texas Department of Transportation and the USDA-NRCS Kika de la Garza Plant Materials Center. Assistance by Shelly Maher, Ralph Bingham, graduate and undergraduate students from Texas A&M University-Kingsville is gratefully acknowledged.

Literature Cited

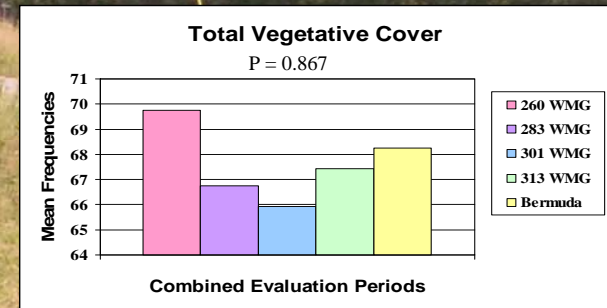
Texas Department of Transportation. 2004. A guide to roadside vegetation establishment. Maintenance Division. Vegetation Management Section. Austin, Texas.



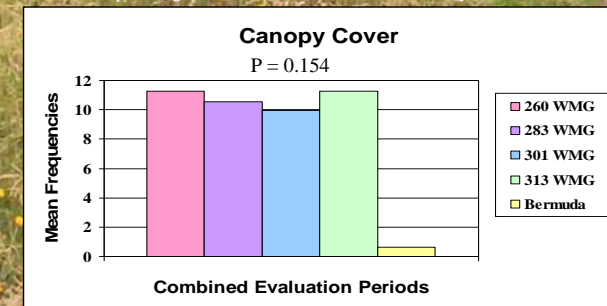
Fig. 1 Study area Andrews County, Texas.



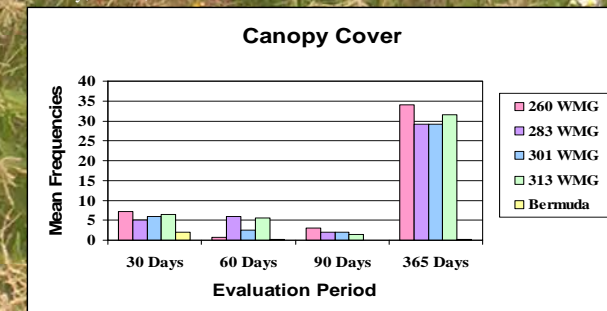
Fig. 2 Point intercept frame.



Graph 1. Total canopy cover means of vegetation averaged across sampling dates, after planting in October 2006, Andrews County, Texas, 2006-2007.



Graph 2. Treatment canopy cover means of bermudagrass and windmillgrass in plantings of 2 accession of hooded windmillgrass (301 and 313), 2 accessions of shortspike windmillgrass (260 and 283), and bermudagrass, averaged across sampling dates, after planting in October 2006, Andrews County, Texas, 2006-2007.



Graph 3. Canopy cover means of bermudagrass and windmillgrass in plantings of 2 accession of hooded windmillgrass (301 and 313), 2 accessions of shortspike windmillgrass (260 and 283), and bermudagrass, at 30, 60, 90, and 365 days after planting in October 2006, Andrews County, Texas, 2006-2007.